CHAPTER VI

SELECTIVE DISSEMINATION OF INFORMATION (SDI) SERVICES
6.1 **Introduction**

Selective Dissemination of Information is known in short as SDI. Henceforth the short-form SDI is used in the discussion. SDI service is a practice of notifying the items/documents/information likely to be of interest to individuals. In this service for each client/user, the description of his interest called 'profile' is prepared. In the manual SDI service the key words of the subject are written in the profile proformas. These proformas are preserved. As and when the library receives the information SDI notifications are sent to user if the information pertains to his subject.

SDI service is matching of the required information with the potential clients. The concept is not new. This type of service has existed for about 50 years in libraries along with other conventional services. SDI has been developed to serve the individual scientists.
6.2 Definitions

Now we shall discuss a few definitions of SDI.

Luhn defines the SDI as "that service within an organisation which concerns itself with the channelling of new items of information, from whatever sources, to those points within the organisation where the probability of usefulness in connection with current work or interest is high. On the other hand, the service endeavours to withhold such information from points where this probability is low. An attended objective is to prevent points from being swamped by indiscriminate distribution of new information and to avert the resulting danger of not communicating at all." This definition provides a clear concept and guiding factor of SDI that nothing useful is left unsupplied and the supply of information is controlled so as to prevent waste. SDI was started when both the volume of information and the user strength became large.

To quote Housman, "A typical SDI service provides each subscriber with a periodic, tailored listing of new documents, that have been entered into the file and that are likely to apply to his work or be of interest to him as a professional. In such a system, each subscriber gets a different set of references, depending on his particular interest, as defined in his 'interest profile'." This definition specifies that the SDI notes the items of interest to users.

To quote Vickery, "Selective dissemination of Information (SDI) is today often used to mean specifically a system in which document and user profiles are matched by computer. Divona and Goldblum restrict the term to systems whose input includes not only these two sets of profiles, but also feedback from users by which their profiles can be altered to improve performance." The above definition


tells us that SDI is more suited to the computerised operations. As the definitions says SDI is more a computerised than manual service. In SDI the alteration of profiles is always necessary to improve the service.

The SDI is a form regarded as reference service. To quote Susanna Kumar, "It is also the practice in some libraries—such as, specialist libraries whose users are small in number to maintain reader profiles which indicate the subjects of interest to them, the level—advanced or elementary at which they are required and the form in which information is required. Whenever information relating to the subjects of a reader's interest is received in the library he is at once informed." In this, the SDI is considered as a changing concept of reference service.

"SDI is the regular provision of scientific information to individual or corporate users, on predetermined subjects (interest profiles)." The subject areas of interest of individuals or groups are always predetermined in SDI. Those are the basis of SDI.


For SDI services exhaustivity, timeliness and relevance are important. The efficiency of any SDI service depends on these three factors.

6.1 Project Oriented Documentation Service (PODS)

The PODS is also SDI for the on-going research projects. The project may have a single investigator or a team of investigators. The SDI is generally rendered to the individual scientists, whereas the PODS is rendered to the whole group.

The SDI service can be rendered very efficiently with the help of computers. In computerised SDI the description of a client's interests called 'profile' is stored in a computer readable form. For the information/document the 'document profile' is prepared. The 'keywords' are used for both the profiles. The computer matches the profiles and notifies the document.

6.3 SDI Title Bulletin and SDI Abstract Bulletin

SDI notification can be with or without an abstract. Because it is required to give only author and titles in 'SDI titles only' bulletin it is a very economical current awareness notification. The 'SDI abstracts' bulletins are
more costly. They are expensive due to longer print-out.
As found out by Blick, "SDI titles only is a very cheap way of obtaining current awareness notification and SDI abstracts is only marginally more expensive due to longer print-outs etc." "Both types i.e. SDI with and without abstracts are found in the world.

6.4. Need for Selective Dissemination of Information

The growth of scientific and technical literature after the world War II has been tremendous and it is beyond the control of human beings. It is impossible for scientists and technologists working even on a very specialized field to read every bit of information which is generated. The libraries have to disseminate the selected information to the scientists. It is for this reason the SDI is needed.

The SDI is needed in any organisation to cull recent literature and make periodic announcements of it on the basis of selection to the clients. The interest profiles would need the selected items without unwanted information included in it. SDI is an answer to avoid the unwanted citations. Even when the scientists subject interests are changed the SDI service is essential.

We will discuss manual SDI services.

6.5 Manual SDI

In the early 1960s, as East observes, cheap labour and the absence of large organisations to support computerisation delayed the effect of computers in information work. The machine readable databases became available as a by-product of the compilation of secondary services which are known as abstracting and indexing services.

Now we shall discuss the reasons for computerisation of the SDI services in libraries.

6.6 Reasons for Computerisation of SDI

As pointed by Raygarth Jackson, the following "most crucial impact factors" influenced the computerisation of CAS in the early 1970s. They include: Exponential growth of the literature, more users of the information service, increase in the number of specialised fields of interest, need for a multi-disciplinary approach to the literature, increase in the speed information is needed, increasing cost of staff, increasing availability of computers, demands for increases in profitability and productivity, increasing cost consciousness, need to improve the

information services. These factors have probably resulted in a widespread move towards the computerised SDI and use of in-house computer services for SDI.

To begin with, the communication between the user and the computerised information store was indirect. It was slow and cumbersome. Earlier the questions were to be punched on cards and the answers were printed. An information analyst was essential in between. But now with the introduction of consoles the user can have direct interaction with the information store. The information need which is created from SDI notification is fulfilled; the user friendly computers will help in saving the time and avoid a mediator.

6.7 History of SDI

If we observe the historical development of the SDI, we find that it was first started manually. Most of the Selective Dissemination of Information provisions began operation in the latter half of the 1960s. In the context of developed countries, its origin can be traced to the mid 1960s. But for a country like India which is a developing country, it started in the mid 1970s.

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H. P. Luhn designed the SDI system with the aid of electronic processing equipment at International Business Machines (IBM) in 1959. It was implemented after the feasibility study in 1960.

The SDI is usually a sub-system within a larger information service.

6.8 **Indian School of Thought**

Now let us discuss the Indian School of Thought regarding the service of this type.

The object of any filing or storage system is to make available at a later date, the information in the documents stored. Each collection will have its own special requirements and any system which meets those requirements will be an adequate retrieval system for that collection. An Indian School of thought has been developed for this.

The SDI service is a part of documentation service. The objectives of documentation are based on the Five Laws of Library Science. The Indian School of thought of SDI service is based on the Five Laws of Library Science enunciated by Dr. S.R. Ranganathan. It is essential here to know the definition given by Ranganathan to understand Indian School

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of Thought of SDI. Dr. S.R. Ranganathan defined documentation as—

1. Promotion and practice of bringing into use of nascent micro thought by specialists (Law 1); and
2. Pin pointed (Law 2);
3. Exhaustive (Law 3);
4. Expenditious (Law 4) service of nascent micro thought to specialists;
5. In spite of the continuous ever-increasing cascade (Law 5) of nascent micro thought on an ever-multiplying number of specialised subjects communicated through several thousands of periodicals. 10

An information system designed to render such an ideal documentation service has been named by initionym "SPEEDS," System for Pin-pointed, Exhaustive and Expenditious Dissemination of subjects. The SPEEDS is an Indian School of Thought. It was developed in 1960s. To quote Bhattacharya, "The objective and function of the system for SDI are similar

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to that of the SPEEDS.*11 The document retrieval service rendered by SDI falls short of the pin-pointedness and exhaustiveness which SPEEDS meets. The feature headings used in SPEEDS system is capable of having more terms than SDI system. The SPEEDS provides pin-pointed information service to a greater extent. The IASLIC Symposium 1968 recommended for study of comparative efficiency of SDI and the system of SPEEDS. 12 But somehow the SPEEDS did not gain popularity although introduced two decades ago.

6.9 World Science Information System (WISIST)

We shall now discuss the organisations and agencies who have contributed for the growth of SDI services in the world.

Scientific information is the essential resource for the work of scientists. To quote, "It is a cumulative resource; knowledge builds the knowledge as new findings are reported. It is an international resource, built painstakingly by scientists of all countries without regard to race, language, colour, religion, or political persuasion."


As it is built internationally, it is used internationally. The Unesco and International Council of Scientific Unions (ICSU) thought of the use of information by everyone in the world who wants it. With this aim Unesco and International Council of Scientific Unions (ICSU) established a committee in January 1967 to study the feasibility of a world science information system.

After four years i.e., in 1970, the Committee published a report entitled 'UNISIST: Study Report on the Feasibility of a World Science Information System by the Unesco and the ICSU'. UNISIST came into existence in 1971. It is a world science information system based on the principle of voluntary cooperation among existing and future national and international systems in a flexible network arrangement.

To quote Subramanyan, "UNISIST is not a centralised, giant structure. The five main objectives of UNISIST are briefly:

1) Improvement of systems interconnections,
2) Strengthening the role of institutional components of the information transfer chain,
3) Development of specialised manpower,
4) Development of scientific information policies and structures,

5) Assistance to developing countries in the development of scientific and technical information infrastructures.\textsuperscript{14}

The UNISIST has assisted India for SDI Projects.

6.10 SDI Service from the International Agencies

With the advent of the computers the time of the readers came to be saved. The narrower areas of interests were served and SDI, the personally tailored services came into being. A number of such services were started from many international agencies. We shall discuss a few representative agencies.

6.10.1 United Kingdom Chemical Information Services (UKCIS)

UKCIS is being operated from the University of Nottingham, Nottingham (UK). UKCIS have started serving individual research workers and information services. UKCIS came into existence in August 1969. UKCIS acquires the machine-readable tapes from the data base producers, loads them into its own computer and provides the SDI services to the scientists.

6.10.2 Canadian Selective Dissemination of Information (CAN/SDI)

CAN/SDI is available from Canada Institute for Science and Technical Information (CISTI), Ottawa. This was started

in 1969. In this programme about 6000 end-users are alerted to the newly published literature in their respective scientific and technological areas. It is a highly decentralised system. The information specialists all over Canada assist the users in different cities.

6.10.3 Computerised Engineering Index (COMPENDEX); New York

COMPENDEX is a information service of Engineering Index (EI) a private non-profit abstracting and indexing service in New York City. COMPENDEX is a monthly magnetic tape information service. This provides on tape the data from January 1969 onwards. This makes available the items published in each issue of the Engineering Index (monthly) by computer.

6.10.4 International Nuclear Information System (INIS)

INIS is a multi national co-operative venture established in 1970 at Vienna. This is created by an autonomous organisation under the auspices of United Nations (UN) called 'International Atomic Energy Agency (IAEA). Its aim is "to improve and expedite the exchange of scientific and technical information between IAEA member states on the basis of multilateral co-operation and to eliminate the overlapping and duplication in the processing of literature."15

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The INIS will achieve the bibliographic control of the nuclear science and technology literature. On the basis of input received from the member states, 'Atomindex' is being published by the INIS.

By virtue of being Indian input centre to INIS data base, Bhaba Atomic Research Centre (BARC), Bombay, gets the information in the form of tapes regularly. With the help of these INIS tapes, the computerised SDI Service is rendered to the BARC scientists. India started getting INIS tapes in 1981. The nuclear scientists working in K. G. Memorial Institute of Oncology (KMIO) at Bangalore have not yet started taking use of this service because they work on a different site i.e. Bangalore. They work in KMIO laboratory on the specific projects assigned by BARC.

6.10.5 Information System for Agricultural Science and Technology (AGRIS)

Under the sponsorship of Food and Agricultural Organization (FAO) of UN, in 1973 March, the AGRIS was started. The publication of 'Agrindex', an international index to world agricultural literature was commenced. It functions from the National Agricultural Library, Beltsville, Maryland (USA).
AGRIS Level Two was conceived around 1979. To quote Dutta, "AGRIS system was conceived as having two complementary facets. Level one provides rapid notification but does not attempt critical selection or exhaustive subject description. Level two was conceived as network of existing specialized centres, analysis centres and data banks with responsibility in depth for certain subject fields. The needs are complementary: speed and comprehensive current awareness for level one, informative abstracts and reviews with detailed indexing for level two." 

AGRIS Level Two provides specific and selective bibliographical data with abstracts as against the universal complete broad subject index. In Level Two more emphasis is given to SDI.

To quote Guha, "From May 1975 India has been participating in the AGRIS System." In India, the Indian Agricultural Statistics Research Institute (IASRI), New Delhi of the Indian Council of Agricultural Research (IASRI), acts as the national input centre to the AGRIS data base. This institute gets the tapes from AGRIS

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organisation. These tapes are used to provide SDI service to the scientists of the institutions of ICAR. The ICAR organisation in Karnataka i.e. the Indian Institute of Horticultural Research, Bangalore is eligible for use of this service. It is now gaining popularity among agricultural scientists in Karnataka.

6.10.6 Medical Literature Analysis and Retrieval System (MEDLARS) (USA)

The United States of America (USA) National Library of Medicine (NLM) is providing the information system known as MEDLARS. This has standard SDI service. MEDLARS is a computer-based bibliographic processing system. It produces the printed 'Index Medicus' and its annual cumulation. Periodical searches are conducted for various bio-medical subjects as SDI service. Subject indexing in this system is based on 'Medical Subject Headings (MeSH).

The Indian medical scientists get the SDI services through the National Medical Library, New Delhi. The facilities are sponsored through World Health Organisation (WHO).
6.10.7 **Excerpta Medica**

Excerpta Medica was created in Amsterdam in 1947-49. With the starting of its computerised data bank containing the data from a large number of articles it renders SDI service. A number of institutions are now subscribing to its SDI service.

6.11 **National Information System for Science and Technology (NISSAT)**

The NISSAT came into existence in 1977; it has established seven information centres in the following:

1) National Information Centre for Food Science and Technology (NICFOSS) Mysore.

2) National Information Centre for Machine Tools and Production Engineering (NICMAP), Bangalore.

3) National Information Centre for Leather and Allied Industries (NICLAI), Madras.

4) National Information Centre for Drugs and Pharmaceuticals (NICDAP), Lucknow.

5) National Information Centre for Crystallography (NICRYS), Madras.
6) National Information Centre for Textiles and Allied Subjects (RICTAS), Ahmedabad.

7) National Information Centre for Chemistry and Allied Subjects (RICHER), Pune.

One of the thrust areas of MISSAT is to support the SDBI service in the national information centres. It has been financing all the seven organisations to render the SDBI services.

6.12 Computerisation of SDBI Services in India

The computerised SDBI services in India are of very recent origin. In the early part of 1960s not even one library had started the computerised SDBI services. To quote Misra, "As SDBI, by mechanised or automated methods is not yet achieved in India purely as propounded by late H.P. Buhn and IBM, only manual methods have been described which include CAS, or alerting service of various types as well as retrospective literature searches made, based on concept of Selective Dissemination of Information."

The computerisation of SDI in India was started in the latter part of 1960s on an experimental basis.

6.12.1 Experiment at IIT, Kanpur

It was in 1964 that the first computer experiment in library and information work in India was carried out at IIT, Kanpur. Here, the INSOC used the IBM 1620 computer for the compilation of union catalogue. The INSOC's experiments were shifted to Delhi later. In 1970, IIT Kanpur conducted some experiments for the housekeeping and SDI services.

6.12.2 INSOC and Computerised SDI

The computerised SDI service of INSOC covers chemistry and allied disciplines. This was a pilot project of UNISIST/Unesco for an year in 1975 to cover countries of South-Asia, Afghanistan, Bangladesh, Burma, India, Nepal, Pakistan and Sri Lanka. There were about 135 users including 125 users from India. This project was funded by DST. The American Chemical Society provided Chemical Abstracts Condensates (CA condensates) data free of charge. For the SDI service, the CAN/SDI software package was used, which was provided by Canada through Unesco.

INSOC is rendering the computerised SDI service regularly in selected subjects using the facilities available at Indian Institute of Technology (IIT), Madras, since 1976.
From January 1977 onwards the Information Services in Physics, Electro-technology and Computer Control (INSPEC) (UK) and Computerised Engineering Index (COMPENDEX) of Engineering Index (EI) New York data base is also used to render SDI services. The demand was on an increasing trend and it increased from 135 to 300 users. This service was financed by NISBAT. Later on, the service was started on payment basis. This marked the lessening of the use of SDI service. To quote, "As a result the population of users dropped markedly."\(^1\)

INSDOC renders SDI in few subjects. To quote Kawatra, "The SDI service being offered covers Chemistry, Chemical Technology and related subjects, Physics, Electrical Technology."\(^2\) It is essential now to cover the remaining subjects of science like Geology, Mathematics and Bio-Sciences etc.


6.12.3 UGC Centre for Science Information, Bangalore

During the Sixth Five-Year Plan the UGC has set up a Centre for Science Information at Bangalore to render the SDI services to the University staff and research scholars all over India. Presently it is housed in the Indian Institute of Science. The SDI service is rendered with the help of computer facility available at the Centre and at the Indian Institute of Science. This centre gets the current data periodically in the form of tapes from the Data bases like GEOREF, BIOSIS and INSPEC. The INSPEC tapes are supplied by INSDOC. The SDI service rendered by the centre is very popular among the university staff and research scholars in Karnataka. It is a free service, for the benefit of the scientific community in the Universities.

6.12.4 SDI Service from Commercial Agency

Informatics (India) Pvt. Ltd., Bangalore is an information shop where the information required is made available. It has started rendering on-line search service, it gives instant access to International Information Centres through computer communication links. To quote from the printed brochure
or Informatics (India) Pvt. Ltd., "Information is available from over 200 data bases from Aeronautics to Zoology." 21

6.12.5 Creation of Data Bases in Karnataka

Commercial data bases may stop the services on the basis that it is uneconomic for them to maintain their data base. In that case relying solely on an 'on-line' commercial data base will force the library to be at the mercy of the data base owners. Such a situation is not there now, as still most of the libraries studied in the present context are not relying on commercial data bases for service. They are developing in-house data bases.

The data base at the local level (in-house) is being created to generate the current awareness service bulletins. The organisations which have computerised in-house data base are-

National Aeronautical Laboratory (NAL), Bangalore,
Central Machine Tools Institute (CMTI), Bangalore,
Hindustan Machine Tools Ltd (HMT), Corporate R & D, Bangalore,

21. Informatics: On-line search Services, (Publicity brochure of Informatics (India) Pvt. Ltd,)
Bharat Heavy Electrical Ltd/Control Equipment Division (BHEL/CED), Bangalore,

IDL-NitroNobel Basic Research Institute (INBRI),
Bangalore, and

Central Food Technological Research Institute (CFTRI),
Mysore.

6.13 Karnataka Scene

Information from 105 organisations (90 research organisations and 15 industries) was obtained to know whether they render the SDI service. The following table shows the results of the replies.

Table 6.2: SDI Service rendered by libraries.

<table>
<thead>
<tr>
<th>Organisations</th>
<th>Rendering SDI Services</th>
<th>Not Rendering SDI Services</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Research organisation</td>
<td>9</td>
<td>10.00</td>
<td>81</td>
</tr>
<tr>
<td>Industries</td>
<td>4</td>
<td>26.67</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>92%</td>
<td>103</td>
</tr>
</tbody>
</table>
Among the research organisations, since there are professional colleagues, the percentage of libraries rendering SDI is low (10.00%). Here also the lack of finance is the reason for low percentage. Among the industries, we find 26.67 per cent organisations rendering SDI service. All the industrial libraries propose to start computerised SDI service.

6.15.1 National Aeronautical Laboratory (NAL), Bangalore

The NAL has established on-line access to the European Space Agency's Information Retrieval Service (ESA-IRS) in Frascati, Italy. In a way, it is Italy-India on-line access. It has been offering an operational on-line search facility since the end of 1986. To quote from Unisist Newsletter, 1987, "The NAL TELESEARCH Service connects its users with more than 70 European data bases by a dedicated satellite link." For this service at present two terminals are installed. These terminals will have an access to the data bases via a leased 2400 bps high-speed telecommunication line over microwave and INTELSAT circuits. This project is supported partially by Unesco/PQI and other scientific

organisations.

The NAL TELESEARCH facility offers the client exhaustive access to current information. The information includes numeric data, full text data and commercial statistics. It facilitates the user to change the search strategy while searching for material. The services are provided at a nominal charge.

Simultaneously, more databases can be searched by the user. The search is interactive. It is interesting to note that the search can be printed on-line. This facilitates further and eases the user to refer the print outs if necessary.

6.13.1.1 Cost and Time Taken

The search would normally last for about 20 minutes. The cost per search for the organisations which have financed the project is US $ 30-35, which includes printing of about 50 abstracts. The services are also available to other needy persons and organisations at an additional surcharge of 50 per cent over and above the total cost.
Although the services are open for any person or organisation, it is used primarily by the Bangalore based scientists and engineers. It is expected to be used by outsiders as well. The high speed terminals installed in NAL by ESA are known as the NIKROTEL package and consists of the following:

1) IBM-XT or compatible micro computer with cpu of 128 RAM,
2) Floppy disc,
3) 10 MB hard disk,
4) Printer,
5) Modem (range 2400 bps to 960 bps),
6) X-25 PAD (telecommunication interface), and
7) Software.

6.13.2 Central Food Technological Research Institute
(CFTRI), Mysore

The National Information Centre for Food Science and Technology (NICFOS) at CFTRI started recently the SDL service on a nominal charge basis, in the area of food science and technology. The computer is made use of...

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for searching. The computer search is planned to be mailed every month. It is expected that this service will help the food scientists of not only Karnataka but also all over India.

After discussing the SDI service in detail, we will now highlight the constraints on libraries for rendering the SDI service.

6.14 Constraints in providing SDI Service

In India the SDI services have not yet become popular. Though there is a demand, organisations are not coming forward to offer this service because of cost. The following are the constraints for SDI service.

a) The cost
b) The quality of SDI service
c) Unreasonably

6.15 The Effects of SDI on Libraries

The SDI service results in a large feedback. There will be a great increase of requests for documents particularly after each SDI mailing. It is likely that there will be another type of feedback to be attended to,
that is a request for revision of profiles. It may not
be the case always; but it is there at regular intervals.

The SDI service results in the regular periodical
print outs. This would need to be systematically sent by
addressing and packaging, etc. The workload will be more
if SDI service is rendered by a library.

The SDI works with three main components—the data
base, the user profile and the search. To quote Housman,
"The SDI product is presented in two stages—first, in the
form of a set of printed citations and then as full copies
of requested documents. All the systems rendering SDI
services should be prepared to provide the full document
if requested by the client immediately. Otherwise the
service will have less utility.

It is anticipated that computer services will diffuse
through many more and there will be a steadily increasing
use of computers for information retrieval services.

The on-line computer services in libraries will also
increase.

24. Housman, Edward, M. "Selective dissemination of
information", In Annual Review of Information Science
and Technology Vol 8, Ed by Carlos A Caudra. Washington,
6.16 Selective Dissemination of Documents (SDM)

Kemp includes Selective Dissemination of Documents (SDM) in the methods by which the clients of a library may be helped to keep themselves currently aware. The SDM service combines the selective element in SDI with the availability of documents. This is useful especially in the case of clients at remote locations who thereby lack direct access to the services and materials in the library.\(^\text{25}\)

This service consists of sending copies of materials to groups of clients at remote locations for retention there. The documents sent in this case are generally in the form of microforms. Hence this service is often known as Selective Dissemination of Microforms (SDM). Such SDM service is required more in case of libraries which are required to serve the large number of clients scattered over different locations.

Kemp says that there have been attempts to provide SDM on a commercial basis but these have not been very successful.\(^\text{26}\)

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26. Ibid. p 75.
6.16.1 University of Agricultural Sciences (UAS), Bangalore

There are organisations which are required to serve the clients at different locations. In some cases it is not obligatory to serve clients in other locations, but in some other cases it is. The University of Agricultural Sciences, Bangalore has a number of research stations. They are part of the university. SDM service could have been started. The SDI is rendered by the UAS library.

6.16.2 Indian Institute of Astrophysics (IIA), Bangalore

The Indian Institute of Astrophysics, Bangalore is obliged to serve various observatories at different locations spread over a vast area. Even in this case also the SDM is not found. However, if documents are required by the scientists working in a particular observatory the library sends them the documents.

In both i.e., UAS and IIA there are other information services rendered by libraries on priority basis.

In Karnataka, we do not find the SDM service in any science library.
6.17 Conclusion

From the investigation we may conclude that some institutes are forced to render SDI service irregularly. There are reasons for this irregularity which are beyond the control of the library staff. For example, the information tape could arrive late. This naturally delays SDI notifications. Such matters have to be sorted out and the regularity has to be maintained.

Mauerhoff says, "Regardless of ambitions of the information centres, the librarians, the tape suppliers, it is futile to shape the future of SDI without the full participation of the individual user in its evolution". 27 The individual user and library staff have to involve fully in the SDI for its proper function.

The following suggestions have been made for rendering effective SDI service in India.

1) The survey of existing SDI services should be conducted by agencies like NISSAT and INSDOC.

2) The SDI services in India should be co-ordinated through NISSAT/INSDOC or other such agencies.

3) INSDOC should start the SDI services in the subjects like Geology, Mathematics and Bio-Sciences.

4) National grid system for SDI services should be established for each group of subjects like 'Engineering Information Grid', 'Bio-Information Grid', 'Medical Information Grid', etc. Such grids should take up the responsibilities of channelising the SDI services.

5) The needs of the scientists change after a certain period. Hence periodic revision of users profiles be undertaken.

6) A few more National Information Centres (Sectoral Centres) of MISTAT should be established.

   During the ensuing 8th Five Year Plan (1990-1995) such centres should be established for all branches of Science and Technology.

   India has a good infrastructure of libraries and information centres now. What is required is some more additional resources for SDI services.